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UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
DIVISION OF PORTLAND

PASCO SCIENTIFIC,
Plaintiff,

v.

VERNIER SOFTWARE & TECHNOLOGY,
LLC,

Defendant.

Case No.: 3:21-cv-01523

REQUEST FOR ORAL ARGUMENT

**DEFENDANT VERNIER SOFTWARE'S OPENING BRIEF IN SUPPORT OF ITS
RULE 12(b)(6) MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM**

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LOCAL RULE 7-1 CERTIFICATION

Defendant Vernier Software & Technology LLC (“Vernier”) and Plaintiff PASCO Scientific (“PASCO”) have conferred and were unable to resolve the dispute.

MOTION

Vernier moves this Court to dismiss the Complaint with prejudice pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure for failure to state a claim upon which relief can be granted.

MEMORANDUM

I. NATURE AND STAGE OF THE PROCEEDINGS

On October 18, 2021, PASCO filed this lawsuit accusing Vernier of infringement of “one or more claims” of United States Patent Nos. 10,481,173 (“the ‘173 Patent”) and 10,753,957 (“the ‘957 Patent,” together “the Asserted Patents”), including “at least claim 1” of each respective patent. In particular, PASCO alleges Vernier’s Go Direct® Sensor Cart is configured to collect data in a manner that measures dynamic properties of an integrated wireless device during a science experiment. Complaint at 7-8, 10.

II. SUMMARY OF THE ARGUMENT

The Asserted Patents are invalid because collecting, analyzing, and communicating information is an abstract concept ineligible for patent protection under 35 U.S.C. §101. Each claim of the Asserted Patents covers a method of collecting and analyzing data implemented using generic and well-known hardware or provides for generic and well-known hardware configured to implement such a method. Accordingly, each claim provides no more than an abstract idea without an accompanying “inventive concept” that could add further structure to the abstract idea. Because of this, each claim is precisely the type of claim established as patent-ineligible by the Supreme Court’s decision in *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 134 S. Ct. 2347 (2014), and by

the Federal Circuit cases that further interpreted this decision. *See, e.g., Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1351 (Fed. Cir. 2016) (finding that a power control method directed to “collection, analysis, and display of available information” using generic hardware was ineligible on the grounds that it recited an abstract idea without “something more”).

The independent method claim of the ’173 patent, claim 15, recites nothing more than (1) generating acceleration data with a generic sensor over some period of time; (2) detecting angular positional changes in another generic sensor over the same period of time, (3) decoding the sensor data of the second generic sensor, and (4) synchronizing the two sets of sensor data. This method requires no more than collecting data from the two recited sensors. The remaining dependent claims further limit this method by reciting different forms of collection and analysis (claims 16-19), and by reciting actions related to display of the data (claim 20). None of this goes beyond the ineligible collection, analysis, and display of data found to be ineligible in *Electric Power Group*.

The other independent claims in the Asserted Patents and their dependent claims add only generic hardware components for implementing the above method. For example, rather than reciting a method for “generating, with an accelerometer... acceleration data,” claim 1 of the ’173 Patent recites “an accelerometer to generate acceleration data,” and otherwise provides an equivalent limitation. The claims of the ’957 Patent are similar, with claim 20, its equivalent method claim, providing a method of (1) generating acceleration data, (2) generating signals with an optical encoder, (3) processing the encoder data, and (4) synchronizing the acceleration data and the encoder data, again without doing more than collecting and analyzing this data. Again, only one dependent claim (claim 22) adds more, but only the step of communicating data, and thus does not add an “inventive concept” under the Supreme Court’s *Alice* test. Dependent claim 22

even uses the same “collection, analysis, and display” language of the ineligible claims in *Electric Power Group*.

The claims of the Asserted Patents, then, do no more than provide for collection, analysis, and (occasionally) display of data, which is exactly what was found to be patent-ineligible in *Electric Power Group*. The apparatus claims, claims 1 and 8 of the ‘173 patent and claims 1 and 10 of the ‘957 patent, rephrase the method limitations in order to provide for the use of generic computer components, such as an “accelerometer to generate acceleration data.” Thus, they do no more than “merely provide a generic environment in which to carry out the abstract idea.” *In re TLI Commc’ns LLC Patent Lit.*, 823 F.3d 607, 611 (Fed. Cir. 2016).

Resolving the issue of patent-eligibility does not require discovery or claim construction. The Complaint contains few factual allegations that relate to the eligibility of its patents under 35 U.S.C. §101 in any manner. The only pertinent allegation appears to be that the patents are entitled to a priority date of 2016. Complaint at 5. None of the generic hardware features would have represented an “inventive concept” in 2016 any more than they do in 2021; thus, PASCO’s factual allegations, when presumed true, provide no additional support that the claims recited in either patent cover patent-eligible subject matter.

Therefore, in order to avoid wasting judicial and party resources by unnecessarily litigating facially invalid patents, Vernier requests that the court dismiss the Complaint pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure for failure to state a claim upon which relief can be granted.

III. STATEMENT OF THE FACTS

The ‘957 Patent is a continuation of the ‘173 Patent, and so each of the patents shares a common specification. They generally purport to provide a wireless device having integrated force

sensing, position sensing, acceleration sensing, and rotational sensing for intended use in science education. ‘173 Patent at 1:8-10.

The Background of the Asserted Patents state that science educators present learning material, such as science experiments or laboratories, to their students in order to “teach students the principals [*sic*] of Newton’s 2nd and 3rd laws of motion.” ‘173 Patent at 1:14-17, 2:30-32. These experiments, conventionally using wheeled carts, are described as making use of external position and force sensors, or a combination of an internal position sensor and an external force sensor, in order to measure the dynamics of the cart. In typical experiments performed with externally mounted sensors, cart acceleration may be inferred by calculating the second derivative of position. The Asserted Patents state that this approach causes a loss of accuracy. ‘173 Patent at 1:17-22.

The Asserted Patents purport to improve on these conventional systems by providing “wireless smart devices having integrated force, position, acceleration, and rotational sensing for science education,” which may allow for easy demonstration of Newton’s laws of motion, kinematics, and any other related scientific principles. ‘173 Patent at 1:30-33. To provide these advantages, the integrated wireless device has an accelerometer to generate acceleration data based on detecting a current rate of acceleration of the integrated wireless device, a shaft encoder to generate angular positional changes of a shaft or axle of the integrated wireless device over time, and at least one processing unit coupled to the accelerometer and configured to convert the electrical signals provided by the sensors into a combined set of data. ‘173 Patent at 1:33-42.

In particular, the Asserted Patents purport to solve the problem of “simultaneously measuring motion, force, linear acceleration and slope with high accuracy and time synchronization from within a dynamics Cart.” ‘173 Patent at 2:45-48. The “high accuracy” is achieved by having acceleration directly measured inside the cart, rather than inferred through

calculation of the second derivative of position. ‘173 Patent at 2:52-54. The Asserted Patents state that it is possible to have sensors within the cart, rather than outside of the cart, through the use of a wireless RF transmitter (such as a Bluetooth transmitter), which may communicate with an external computer for data collection, data analysis, and data display in a manner that would not suffer from the adverse effects associated with a wired connection. ‘173 Patent at 2:48-52. Another advantage of disposing sensors on the cart, achieved through the use of wireless communication, is that slope can be measured directly by a sensor disposed on the cart, specifically a gyroscope. ‘173 Patent at 2:54-55. Likewise, since a force sensor disposed on the cart is used instead of an external sensor disposed on an external surface of the track, no track is required in order to ensure that the cart is guided properly to the external sensor. ‘173 Patent at 7:1-2.

The specification concedes that the computer processing devices that interpret the sensors into useful data may be *general-purpose processing devices*, appropriately configured. ‘173 Patent at 4:46-48. As provided in Figure 1, such a device may be a generic processor that combines data provided by the sensors, such as by synchronizing at least two of acceleration data received from the accelerometer, rotational data of the gyroscope, positional data, and force data of the force load cell. ‘173 Patent at 6:53-57. The specification provides no further details about the synchronization algorithm, merely describing in other parts that the data may be synchronized by the generic processor. ‘173 Patent at Abstract, Figure 8, 1:39-42, 2:45-48, 3:2-4, and 6:53-57. Once the data is synchronized, it is transmitted by a generic wireless device for collection, analysis, and display. ‘173 Patent at 6:57-64.

Claim 1 of the ‘173 patent – which provides a physical implementation of the method on generic hardware of claim 15 – is representative of the asserted claims:

1. An integrated wireless device for collecting data that measures dynamic properties of the integrated wireless device during a science experiment

comprising: an accelerometer to generate acceleration data based on detecting a current rate of acceleration of the integrated wireless device over a period of time; a shaft encoder to detect angular positional changes of a shaft or axle of the integrated wireless device over the period of time; and at least one processing device communicatively coupled to the accelerometer and the shaft encoder, the at least one processing device is configured to decode angular position data of the encoder into positional data over the period of time and to time synchronize the acceleration data received from the accelerometer with the positional data decoded by the at least one processing device for the science experiment over the period of time.

The claim can be broken down into several features: (1) an accelerometer, provided for the purpose of generating acceleration data based on detecting a current rate of acceleration of the integrated wireless device over a period of time; (2) a shaft encoder, provided for the purpose of detecting angular positional changes of a shaft or axle of the integrated wireless device over the period of time, and (3) at least one processing device communicatively coupled to the accelerometer and the shaft encoder. The at least one processing device is (4) configured to decode angular position data of the encoder into positional data over the period of time, and (5) configured to time synchronize the acceleration data received from the accelerometer with the positional data decoded by the at least one processing device for the science experiment over the period of time.

In other words, the claim provides (1) an accelerometer used for its conventional purpose of detecting acceleration, (2) a shaft encoder used for its conventional purpose of detecting changes in position of a shaft, and (3) a processing device used in order to perform its conventional purpose of (4) decoding sensor data and (5) combining data with other data in a generic manner. The steps are directed to collecting data from two generic sensors, without any substantive analysis or even providing the data as an output. Thus, the claimed devices and methods require only a generic set of sensing devices and computer components, used entirely for their conventional functions.

IV. LEGAL STANDARDS

A. Legal Standard for Dismissal Pursuant to Rule 12(b)(6)

To survive a Rule 12(b)(6) motion to dismiss, a complaint must plead enough facts to state a claim to relief that is plausible on its face. *See Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570 (2007); *Starr v. Baca*, 652 F.3d 1202, 1216 (9th Cir. 2011). When considering a motion to dismiss, a complaint’s factual allegations are taken as true, and legal conclusions are given no deference and left for the court to decide. *See Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (noting tenet that allegations are taken as true on a motion to dismiss “is inapplicable to legal conclusions”).

B. Patent-Eligibility is a Question of Law Which May Contain Issues of Fact

Patent eligibility under 35 U.S.C. § 101 is a threshold question of law, though the patent eligibility inquiry may contain underlying issues of fact in certain circumstances. *Berkheimer v. HP Inc.*, 881 F. 3d 1360, 1365 (Fed. Cir. 2018). It is appropriate to resolve patent eligibility at the pleading stage “when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law.” *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018).

Courts routinely resolve questions of patent eligibility at the pleading stage to prevent parties and courts from expending resources litigating ineligible patents. *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1349 (Fed. Cir. 2014); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016) (“We have repeatedly recognized that in many cases it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion.”).

C. Requirements for Patent Eligibility Under Section 101

Section 101 sets forth four categories of patentable subject matter: “any new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. As a result, the

following are not eligible for patent protection: “laws of nature, physical phenomena, and abstract ideas.” *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980). A claim directed to one of these exceptions is ineligible for patent protection.

“Abstract ideas” are ineligible for patent protection because “they are the basic tools of scientific and technological work.” *Id.* at 3253 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Determining whether a patent claim is impermissibly directed to an abstract idea involves two steps under *Alice*. In the first step, the court determines “whether the claims at issue are directed to a patent-ineligible concept.” *Alice*, 134 S. Ct. at 2355. In the second step, if the claim contains an abstract idea, the court evaluates whether there is “an ‘inventive concept’—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” *Id.* (internal quotations and citations omitted).

Transformation into a patent-eligible application requires “more than simply stating the abstract idea while adding the words ‘apply it.’” *Id.* at 2357 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)). For example, if a claim could be performed in the human mind, or by a human using pen and paper, it is not patent-eligible. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011). In another example, a claim covering an abstract idea does not become patent eligible merely by including only token or insignificant pre- or post-solution activity, such as identifying a relevant audience, category of use, field of use, or technological environment. *Mayo*, 132 S. Ct. at 1297–98, 1300–01; *Diamond v. Diehr*, 450 U.S. 175, 191–92 & n.14 (1981); *Parker v. Flook*, 437 U.S. 584, 595 n.18 (1978).

Finally, “simply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas cannot make those laws, phenomena, and ideas patentable.” *Mayo*, 132 S. Ct. at 1300. For example, a claim that is “directed to a result or effect that itself is the abstract idea and merely invoke[s] generic processes and machinery” rather than “a specific means or method that improves the relevant technology” is not eligible for patenting. *See Smart Sys. Innovations, LLC v. Chi. Transit Authority*, 873 F.3d 1364, 1371 (Fed. Cir. 2017). This extends to cases where the “generic processes and machinery” are computer hardware, such as a generic processor and a memory configured to perform some function, as well as cases where the “generic processes and machinery” are some other hardware, so long as the claim remains directed to the result or effect of providing the abstract idea and merely invokes the generic hardware. *See, e.g., Yu v. Apple*, Nos. 1 F.4th 1040 (Fed. Cir.) (combination of a routine and conventional practice for image processing with a generic digital camera is patent-eligible).

V. ARGUMENT

PASCO’s Complaint should be dismissed with prejudice under FED. R. CIV. P. 12(b)(6) because it fails to state a claim upon which relief may be granted. The claims of each of the Asserted Patents are invalid under Section 101 because they fail both steps of the Supreme Court’s *Alice* test. Each of the claims is directed to the abstract idea of making measurements, and each provide no more than generic sensor arrangements and measurement apparatuses operating in a routine and conventional way to provide the claimed advantages. None of the claims goes beyond embodying an abstract idea in this manner, and none of the claims provides an “‘inventive concept’ ... sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” *See Alice*, 134 S. Ct. at 2355.

A. Claim 1 of the ‘173 Patent is Representative

When analyzing a large number of claims of a patent or set of patents from the same patent family, courts often focus on a representative claim. *See, e.g., Content Extraction*, 776 F.3d at 1348 (ruling one claim is representative because all of the asserted claims are “substantially similar and linked to the same abstract idea.”); *see also Alice*, 134 S.Ct. at 2352 (invalidating over 200 claims across four patents based on two representative claims).

Here, all six independent claims and all of the dependent claims recite the same abstract idea of collecting, analyzing, and occasionally displaying experimental data, collected from a generic set of sensors. Claim 1 of the ‘173 patent and claim 1 of the ‘957 patent each recite an integrated wireless device or system incorporating a generic accelerometer, a generic encoder, and a generic processing device. Claim 8 of the ‘173 patent and claim 10 of the ‘957 patent each recite an integrated wireless cart having similar features, and claim 15 of the ‘173 patent and claim 20 of the ‘957 patent each recite a method for taking measurements which requires the presence of similar features.

Each of the claims generally requires the features discussed above with respect to independent claim 1 of the ‘173 patent, including (1) an accelerometer used for its conventional purpose of detecting acceleration, (2) a shaft encoder used for its conventional purpose of detecting changes in position of a shaft, and (3) a processing device used in order to perform its conventional purpose of (4) decoding sensor data and (5) combining data with other data in a generic manner.

The additional limitations provided by some of the independent claims, such as having an axle of the integrated wireless cart be connected to “a plurality of wheels enabling movement of the integrated wireless card over a period of time” as in claim 10 of the ‘957 patent, do not alter the eligibility analysis. Each additional feature recited in the independent or dependent claims is either generic and conventional hardware (such as wheels on a cart in claim 8 of the ‘173 patent)

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or a post-solution limitation (such as a rechargeable battery used to power the cart in claim 3 of the '957 patent).

A comparison of each dependent claim to the representative claim reveals that they do not provide any inventive concept. Claim 2 of the '173 patent specifies that the shaft encoder is specifically an optical shaft encoder operating in a conventional manner for optical shaft encoders. Claim 3 adds a gyroscope that performs the conventional function of detecting rotational attributes of the integrated wireless device including pitch, roll, and yaw over the period of time in which the other measurements are made. Claim 4 adds a force load cell to measure force. Claim 5 adds time synchronization of data provided by the recited sensors. Claim 6 adds a RF transmitter for transmitting the data. Finally, claim 7 provides a negative limitation, specifying that there are no wired connections to external components.

Independent claim 8 of the '173 patent provides an “integrated wireless cart” rather than an “integrated wireless device,” and differs in that it uses different generic terminology for the contemplated sensors. For example, claim 8 recites a “motion device,” rather than an “accelerometer,” which is provided to “generate motion data based on detecting a current rate of motion of the integrated wireless cart over a period of time.” The shaft encoder coupled to an axle of the cart is also recited, as well as the generic processing device.

Dependent claim 9 of the '173 patent provides that the shaft encoder is positioned proximate to the axle. Dependent claim 10 specifies that the “motion device” includes an accelerometer, and also recites the gyroscope configured to act as a gyroscope that is also recited in claim 3. The remaining dependent claims that depend from independent claim 8 generally emulate their equivalents that depend on claim 1, providing a force load cell for measuring force,

providing for synchronization of measured data, providing for a RF transmitter, and providing for a lack of wired components.

Independent claim 15 of the '173 patent provides a method claim for using an integrated wireless device generally corresponding to what is recited in claim 1. This independent claim provides for using the accelerometer of the integrated wireless device in order to measure acceleration, using a shaft encoder in order to measure changes in position of a shaft, processing the sensor data, and synchronizing the processed data.

The dependent claims depending from claim 15 generally are similar to the other dependent claims. Dependent claim 16, like dependent claim 9, provides that the shaft encoder configured to detect positional changes in the axle is positioned proximate to the axle. Dependent claim 17 provides that a gyroscope may also be collecting data, dependent claim 18 provides that a force load cell may also be collecting data, dependent claim 19 provides that the data collected from the sensors may be synchronized, and dependent claim 20 provides a RF transmitter for transmitting the data. Notably, none of the recited limitations of any of these claims go beyond collecting, analyzing, and transmitting the experimental data.

The same is true for all of the claims of the '957 patent, which are likewise similar to the proposed representative claim.

There is nothing in the claims of the two Asserted Patents that provides for more than the collection, analysis, and potential later communication and display of data that is provided by claim 1 of the '173 patent. Some claims recite further generic sensors and recite similar methods of using these further generic sensors in order to provide the expected data outputs from these sensors. Likewise, some claims recite that all of the sensor data may be collected in a transmission, or that the sensor data that is collected at the same time and associated with timing information

may be synchronized, ensuring that sensor data collected at the same time uses the same time information. Neither the claims or specification provide any more detail on what algorithms may be used in order to synchronize the data, making it very clear that there is no non-generic, non-routine, or non-conventional technique that is used in order to do this that could even potentially provide some sort of “inventive concept” to the claims. Finally, some of the claims recite further features that are peripheral to the intended purpose of collecting data or otherwise provide routine, conventional extra-solution activity, such as providing that an electronic device intended to be self-contained and to provide power to various systems may have a rechargeable battery.

Since no claims appear to provide anything other than the collection, analysis, and potential later communication and display that is provided by claim 1 of the ‘173 patent, claim 1 should be considered representative for the purposes of the Section 101 analysis for both Asserted Patents.

B. Collecting, Analyzing, and Communicating Data Using Conventional Methods is an Abstract Idea, Without “Something More”

The claims of the asserted patents cover the abstract idea of collecting, analyzing, and potentially displaying information. The Federal Circuit has consistently held that the steps of collecting information, analyzing information, and potentially communicating the information for display -- whether alone or in combination -- are abstract. *See, e.g., Elec. Power Grp.*, 830 F.3d at 1354 (“gathering and analyzing information of a specified content, then displaying the results” is abstract); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340–42 (Fed. Cir. 2017) (“collecting, displaying, and manipulating data” is abstract); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017) (“functional results of ‘converting,’ ‘routing,’ ‘controlling,’ ‘monitoring,’ and ‘accumulating records’” are abstract); *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258–59 (Fed. Cir. 2016) (“wirelessly communicating regional broadcast content to an out-of-region recipient” is abstract);

Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co., 916 F.3d 1363, 1368 (Fed. Cir. 2017) (“collecting, analyzing, manipulating, and displaying data” is abstract); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016) (“collecting information, including when limited to particular content” is abstract); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1344 (Fed. Cir. 2018) (“information as such is an intangible, and ... collecting, analyzing, and displaying that information, without more, is an abstract idea”).

Electric Power Group is most often cited to support this proposition and the above cases may be referred to as the “*Electric Power Group* line of cases.” In *Electric Power Group*, the Federal Circuit held that a power control method, specifically a “method of detecting events on an interconnected electric power grid,” was invalid under Section 101. *Elec. Power Grp.*, 830 F.3d at 1352.

Claim 12 of U.S. Patent No. 8,401,710, held as representative in *Electric Power Group*, included steps for detecting events on an interconnected electric power grid. First, it covers an electrical power grid system collecting a plurality of data streams in real time at “geographically distinct points over the wide area of the interconnected electric power grid,” from at least two distinct sources including from among control areas, transmission companies, utilities, regional reliability coordinators, and reliability jurisdictions, as well as from at least one of transmission maps, power plant locations, and EMS/SCADA systems, as well as from a plurality of non-grid data sources. Next, it covers detecting and analyzing events in real-time from all of these data streams that are being simultaneously received from each of the at least five distinct sources, based on specific analysis techniques.

Once this analysis is complete, the system displays the event analysis results in a manner that provides for concurrent visualization of measurements from the data streams, and then derives

a useful result to be shown to a user on the display, a “composite indicator of reliability” that is an indicator of power grid vulnerability. This is derived from a combination of one or more real-time measurements or computations of measurements provided in the data streams, particularly taking into account at least two of the types of data.

The Federal Circuit ruled the claims abstract, finding “nothing sufficient to remove the claims from the class of subject matter ineligible for patenting.” *Id.* at 1354. The court noted that a large portion of the lengthy claims is devoted to enumerating types of information and information sources linked to a particular environment, namely the power grid. However, confining the data sources to the particular environment of the power grid amounted to merely “limiting the claims to the particular technological environment of power-grid monitoring,” which, without more, was insufficient to transform the claim elements into patent-eligible applications of the abstract idea that was at the core of the claims. *Id.* at 1354-55. The mere selection of information, by content or by source, for collection, analysis, and display “does nothing significant to differentiate a process from ordinary mental processes.” *Id.* at 1355.

The court in *Electric Power Group* helpfully provided a list of aspects not present in the claims, that might (but were not guaranteed to) influence the eligibility analysis in an alternative case where they were present. The claims of *Electric Power Group* did not require any new sources of information, such as new sensors for analyzing the electrical power grid. They did not recite a new type of information, or a new technique for analyzing information, such as a metric for power-grid monitoring that had not been previously used. They did not invoke any assertedly inventive programming, such as a new technique for reconciling all of the data being collected in real time from all of these various data sources in particular locations. Finally, they did not require any nonconventional computer, network, or display components, using wholly generic computer

components operating in their usual fashion in order to provide its system of gathering, sending, and presenting information from the various data sources. *Id.*

In the absence of all of this, the court concluded that *Electric Power Group*'s invocation of computers and networks was "not even arguably inventive," and was clearly insufficient to "pass the test of an inventive concept in the application' of an abstract idea." *Id.* The claims of the Asserted Patents similarly fail to include any limitations that would negate a finding of abstractness. None of the independent or dependent claims of either the '173 or the '957 patent provides subject matter that the *Electric Power Group* court would have found to be even arguably inventive. Indeed, the Asserted Patents are *more poorly positioned* than the *Electric Power Group* claims; none of the claims of the Asserted Patents contain even the limited subject matter that the *Electric Power Group* claims had used to arguably provide a solution.

Just as in *Electric Power Group*, the claims of the Asserted Patents do not require a new source of information, or any new instrumentation. The independent and dependent claims variously require an accelerometer operating to measure acceleration, a rotational shaft encoder operating to measure rotational shaft motion, a gyroscope, and a force load cell. Each of these sensors is conventional. Indeed, the Asserted Patents provide no detail about these instruments, merely describing them as "an accelerometer" and "a shaft encoder," leaving it to a person of ordinary skill in the art to identify exactly what class of instrument is being referred to, what capabilities it might have, and what constructions may be suitable. '173 Patent at 1:33-39.

The use of conventional systems to provide data collection is, in fact, noted to be a particular advantage of the contemplated "Smart Cart." The specification notes that a previous system had relied on particular processing in order to calculate acceleration in a way that did not require the system to feature an acceleration sensor, inferring acceleration by calculating the

second derivative of position over time. ‘173 Patent at 1:21-24. The specification of the Asserted Patents calls specific attention to the fact that this solution is being discarded, and that acceleration is being measured in the conventional manner: with an acceleration sensor. None of the sensors use any processing technique that provides results beyond the information that is typically collected by the sensor.

The claims of the Asserted Patents also do not require any new type of information. As noted, accelerometers, rotary encoders, and so forth are wholly conventional devices, and so are their outputs. The accelerometer generates acceleration data, the rotary encoder detects angular positional changes, and so forth.

The claims of the Asserted Patents do not include any new techniques for analyzing this data. The only substantive data processing that the specification of the Asserted Patents contemplate is synchronizing the data collected from each sensor, prior to transmission of the sensor data for collection, analysis, and display. ‘173 Patent at 2:45-50. Yet the discussion of this process conveys no inventive concept. The specification does not provide any description of *how* synchronization is provided that could even arguably make use of a new and inventive algorithm for synchronization, such as one that provides greater resource efficiency, or is faster, or prevents data losses. Instead, the specification simply asserts that synchronization happens, and leaves implementation of some conventional synchronization technique up to the reader.

The claims of the Asserted Patents do not otherwise require an inventive set of components or methods, or any assertedly inventive programming, or any other such hypothetical “inventive concept” discussed in the *Electric Power Group* case. Further, as mentioned, they even fall short of providing the limited solutions that *are* provided in the *Electric Power Group* case. Those claims, as conventional as they are, at least provide some sort of specific, useful result for the user:

a “composite indicator of reliability” that can be provided and presumably updated in real time, along with a real-time view of the system data that shows the incoming data streams from each of the disparate sensors. The claims of the Asserted Patents, however, simply connect several conventional sensors together and do nothing with them. The “solution” is just to have a set of sensors be aggregated together, something that the representative *Electric Power Group* claim does in its first three clauses.

The remaining cases in the *Electric Power Group* line reinforce this conclusion. For example, *Interval Licensing*, which discusses an “attention manager” for displaying two sets of content in a synchronized way so as to ensure that they do not overlap, likewise repeatedly reiterates that collecting, analyzing, and displaying information from conventional sources, without more, constitutes an abstract idea. *Interval Licensing*, 896 F.3d at 1344.

In short, the claims of the Asserted Patents are directed to a concept that the Federal Circuit has repeatedly, and consistently, held is an abstract idea under step one of the *Alice* test.

C. The Claims Do Not Include An Inventive Concept Under Step 2 of *Alice*

As explained above, the *Electric Power Group* line of cases also demonstrate, under step two of the *Alice* test, that the claims of the Asserted Patents also do not include an “inventive concept.” *Electric Power Group* – which the Federal Circuit indicated did not even *arguably* require an inventive set of components or methods, or other such inventive concept – goes *much further than the claims of the Asserted Patents* in providing a specific, identifiable improvement to the functionality of a computer system that is yielded as a result of processing the collected data. The present claims do not provide any specific data processing result or solution at all, not even something like the “composite indicator of reliability” of *Electric Power Group*.

D. Other Federal Circuit Case Law Also Supports A Finding of Patent-Ineligibility

While the method claims of each patent in the Asserted Patents parallel the representative method claim of *Electric Power Group*, the other independent claims, such as claims 1 and 8 of the ‘173 patent, are directed to physical devices constituting collections of generic sensors which are used to implement the methods. For example, claim 8 of the ‘173 patent provides for an integrated wireless cart, which has generic features of a cart, such as an axle and a plurality of wheels. The use of generic and conventional hardware does not provide an “inventive concept.” Instead, this merely represents an integration of the abstract idea into some particular technological environment, which has been consistently shown not to change the patentability analysis.

A recent case, *Yu v. Apple*, found that the combination of generic camera hardware with a photographic technique that photographers had been using to enhance images for “over a century” did not provide an “inventive concept.” *Yu v. Apple*, Nos. 2020-1760, 2020-1803, at *4 (Fed. Cir. June 11, 2021). *Yu* held that claim 1 of the patent at issue covered an “improved digital camera,” which included a first and second image sensor closely positioned with respect to a common plane, with the second image sensor being sensitive to a full color spectrum. The camera further included two lenses, each mounted in front of the image sensors. The technique implemented by the camera design provided that the first image sensor would produce a first image and the second image sensor would produce a second image, and the camera would then further include a digital image processor configured to use the second digital image to enhance the first digital image.

The Federal Circuit emphasized that a claim directed to “a result or effect that itself is the abstract idea and merely invoke[s] generic processes and machinery” does not provide an “inventive concept” that builds on the abstract idea. For a patent claim to provide an “inventive

concept,” it must provide a “specific means or method that improves the relevant technology.” *Id.* at *5.

It was undisputed that the idea and practice of using multiple pictures to enhance one another has been known by photographers for over a century, and so the addition of this concept added little. The specification, likewise, emphasized that the components of the system were themselves generic and conventional, and were performing only their basic functions when looked at either alone or in the context of the broader claim; the first image sensor produces a first image, while the second image sensor produces a second image, and other hardware for storing the images then combines the first image and the second image. *Id.* at *6. Because the system was made up only of a set of conventional components performing only their basic functions, set forth with a high degree of generality, the Federal Circuit concluded that what was claimed was simply a generic environment in which to carry out the abstract idea.

While the patent holder argued that the claims provided an improvement to digital camera functionality by embodying the method in some particular device, allowing the device to address problems such as “low resolution caused by low pixel counts” and “inability to show vivid colors caused by limited pixel depth,” the solution to these problems was the abstract idea itself: providing a system which could have the image sensors produce two different sensor outputs, which would then be combined into an “enhanced” image output by the system to provide a higher-quality image. *Id.* at *7. The generic hardware limitations merely served as a “conduit” by which the steps of retrieving the image sensor output and combining the image sensor data into an improved combination image according to the abstract idea could be provided.

As in *Yu*, the claims of the Asserted Patents that refer to hardware merely serve as a conduit by which the method steps, involving retrieving the sensor output and combining the sensor data

according to an abstract idea, could be provided. Similar to the comparison to *Electric Power Group*, the only material distinction between the representative claim of *Yu* and the claims of the Asserted Patents is unfavorable to the Asserted Patents. While the *Yu* claims also provide an integrated device that includes particular generic sensors configured to collect particular types of data, the *Yu* invention actually employs the collected data from each sensor in order to provide an improved final result. Instead of merely referring to “synchronizing” this data in order to transmit it with a generic transmitter, as in the claims of the Asserted Patents, *Yu* relies on each set of data to construct a new, enhanced image different from either of the images produced individually by the image sensors. The claims of the Asserted Patents, meanwhile, are limited to providing an integrated device that includes generic sensors configured to collect particular types of data, essentially the “generic environment” of *Yu*, without even a token recitation of enhancing the collected data in any way that would result in the transmitted data being greater than the sum of its parts.

Under *Yu*, even if the claims of the Asserted Patents went further, were more narrowly drafted, and provided additional non-generic detail, such as additional detail about the synchronization steps, this would *still* not be enough for the claims of the Asserted Patents to recite an “inventive concept.” There can be no question that the claims of the Asserted Patents as they are now – which provide strictly for collection and analysis of data from generic sources, only occasionally even require generic display of this data, and do not do anything with the data to make it greater than the sum of its parts – are not directed to any “inventive concept.”

Comparing the claims of the Asserted Patents to claims the Federal Circuit has held patent-eligible further demonstrates that the Asserted Patents are invalid. Eligible claims provide specific means for improving computer technology, or solving specific problems related to computer

technology. For example, in *Thales Visionix Inc. v. US*, 850 F. 3d 1343 (Fed. Cir. 2017), the patent concerned a “system for tracking the motion of an object relative to a moving reference frame.” In order to address this specific problem, the patent in *Thales Visionix* substituted conventional sensors for measuring inertial changes with inertial sensors that would measure the gravitational field in the platform frame. The resulting system, which provides a sufficiently unconventional solution that it would apparently seem “seem somewhat strange” to those within the field, provides a solution that is generally applicable to any type of moving platform, is simpler to install than conventional systems, and protects “only the application of physics to the unconventional configuration of sensors as disclosed,” similar to what was provided in past cases like the Supreme Court’s *Diehr* case. *Id.* at 1347, 1349; *see also Diehr*, 450 U.S. 175.

The claims of the Asserted Patents likewise set forth a technique that is alleged to reduce the amount of error present in calculations related to observed acceleration of a moving vehicle. However, this is where the similarities end. The claimed invention in *Thales Visionix* replaces a conventional solution (specifically, using a conventional inertial sensor on a moving vehicle and a conventional inertial sensor on an object within the moving vehicle, such as a pilot’s helmet) with an unconventional one (replacing the conventional inertial sensor on the object, configured to measure inertial changes with respect to the Earth, with a sensor configured to directly measure the gravitational field in the reference frame). The patent then recited a set of specific calculation equations, particularized to the placement of the sensors, that together would provide the beneficial result of reduced calculation error. The specific use of sensors configured to calculate position information relative to the frame of the moving platform was conclusively established as being a non-conventional solution to this problem.

The Asserted Patents, however, assert that they provide an “improvement” by replacing a one conventional solution (the use of a positional sensor to also detect acceleration) with another conventional solution (simply using an acceleration sensor). The Asserted Patents do not indicate that there were any technical obstacles that would have prevented the use of a conventional acceleration sensor in past Smart Cart designs. There do not appear to be any reasons why a past Smart Cart would have been limited to using only a position sensor, rather than simply using the more obvious conventional solution of adding an accelerometer to detect acceleration. Aspects of the device like its size and weight are seemingly arbitrary. No “inventive concept” is achieved by keeping the Smart Cart under a given size or weight or cost.

Instead, it appears that PASCO Scientific simply noticed that (due to the innovations of others in the microelectromechanical components (MEMs) fields, and not any of its own innovations) accelerometers and gyroscopes had been made small enough and inexpensive enough to be easily included in any Smart Cart design. Such devices have been made small enough, cheap enough, and ubiquitous enough to be included in any smartphone, and so adding these ubiquitous devices to a Smart Cart would have made logical sense. The patent disclosure of each of the Asserted Patents essentially admits that this is the only advantage that it contemplates by stating that “cost is greatly reduced” by the sensor substitution. ‘173 Patent at 2:55-56.

Purchasing conventional products that others have made better and cheaper, and adding them to a design in order to have them operate in their intended ways, may well be a good business decision. However, this does not qualify as an inventive concept. Each individual component used in the Smart Cart design embodied by the Asserted Patents was routine, conventional, widely known, and widely used. Accelerometers provide acceleration data, are specifically intended for this, and are widely known to do so. Shaft encoders provide shaft positional data, are specifically

intended for this, and are widely known to do so. Each of the other components recited in the claims also function according to their intended conventional purpose. The end result is a system that combines several different types of sensors to provide data. There is absolutely no innovation provided, and no reason for the claims of the Asserted Patents to pass either Step One or Step Two of the *Alice* test.

E. There Are No Claim Construction or Factual Disputes Preventing the Court from Ruling on this Issue at the Rule 12 Stage

There are no factual or claim construction issues preventing the Court from ruling on this issue at the Rule 12 stage. Even if every aspect of the design described in the specification of the Asserted Patents were incorporated in its entirety into the asserted claims, the claims would *still* provide no more than an abstract idea, implemented in a generic hardware environment that provides no more than a conduit for implementing the abstract idea, for the reasons previously discussed. The present motion is ripe and should be granted.

VI. CONCLUSION

For the foregoing reasons, Vernier respectfully requests that the Court dismiss PASCO's Complaint for failure to state a claim upon which relief could be granted. Because leave to amend would be futile, Vernier requests dismissal with prejudice.

DATED: December 20, 2021

Respectfully submitted,

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